Amendment No. 0001 to BAA 06-011
"Compact High-Power-Density Waterjet"

1. The purpose of Amendment 0001 is to revise the Performance Requirements for this solicitation. Accordingly, paragraph 6 – Research Opportunity Description, Performance Requirements of the Compact High-Power-Density Waterjet is hereby revised to read as follows:

Performance Requirements of the Compact High-Power-Density Waterjet:

1. Required Thrust: Total effective power (PE) in calm water as a function of ship speed, V_{ship}, is provided in Table 1 for a notional monohull JHSS ship. It is assumed that the ship will be propelled by four (4) waterjets, each providing ¼ of the total thrust. The waterjet pump shall be designed for a maximum continuous shaft power of 36 MW. Maximum ship speed shall be determined by using the total ship resistance shown in Table 1, and maximum sustained speed shall be defined as the speed achieved in calm water at 85% maximum continuous power.

Table 1: Estimated Effective Power for a Notional Monohull JHSS

Ship Speed Vs (kts)	Effective Power PE (KW)	Effective Power PE (HP)
10	1772	2376
12	3024	4055
14	4752	6373
16	7043	9445
18	10015	13430
20	13752	18442
22	18223	24437
24	23334	31291
26	29354	39364
28	36269	48638
30	43477	58304
32	50136	67233
34	57849	77577
35	63601	85290
36	70966	95167
37	79895	107141
38	90389	121214
39	102955	138065
40	118357	158719

Notes: (1) PE = Total Resistance (R_T) x Ship Speed (V_{ship})
(2) The PE includes the estimated appendage drag, air drag, 8% margin, and the correlation allowance (C_A) of 0.0002.

2. **Diameter: The maximum internal pump diameter shall not exceed 10 feet. A maximum internal diameter smaller than 10 feet will be considered favorably when assessing overall performance.**

3. **Pump Configuration: The pump shall have a maximum of two (2) blade rows (1 rotor, 1 stator).**

4. Cavitation: There shall be no thrust breakdown or cavitation damage with continuous, non-transient, operation in calm water at constant speeds up to that achieved at maximum continuous power of 36MW per pump, or 144MW total for the ship. This condition shall be met if model test results indicate there is less than 1% reduction in pump efficiency due to cavitation within the entire speed range.

5. **Propulsive Efficiency: Propulsive efficiency shall be made as high as possible while meeting other requirements.**

6. Hull – Propulsor Interaction: The offerors shall use the following values for thrust deduction and wake fraction at the design speed:

$$1\text{-}t = 1.045, \text{ and } 1\text{-}w = 0.90.$$

Note: The following Performance Requirements remain unchanged as a result of Amendment 0001 to the subject Solicitation : Item # 1) Required Thrust, Item # 4) Cavitation and Item # 6) Hull-Propulsor Interaction.

ALL OTHER REQUIREMENTS REMAIN UNCHANGED.